

For your records

# **PATHFINDER<sup>®</sup>**

**A Schlumberger Company**

***DIRECTIONAL SURVEY REPORT***

*30-015-40404*

**YATES PETROLEUM**

***ZIA 'AHZ' FEDERAL COM #2H***

***EDDY COUNTY, NEW MEXICO***

**RECEIVED**

SEP 13 2012

**NMOCD ARTESIA**

**PREPARED BY: JUAN ALCOCER**

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:  
A) GEORGE SAKAS
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 6/22/12 TO 7/10/12
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: GAMMA-RAY
8. COMPLETE IDENTIFICATION OF WELL:  
  
YATES PETROLEUM  
ZIA 'AHZ' FEDERAL COM #2H  
EDDY COUNTY, NM  
RIG: PATRIOT 5
9. SURVEY CERTIFIED FROM: 359 TO 12,825 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4,714.42 FEET ON A BEARING OF 272.88 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12,900 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

  
\_\_\_\_\_  
JUAN ALCOCER  
MWD COORDINATOR

# PathFinder Energy Services, Inc.

## BHL Report

Page 01/01  
Tie-in Date: 06/18/2012  
Date Completed: 07/10/2012

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YATES PETROLEUM CORP.  
ZIA AHZ FED COM #2H  
EDDY COUNTY, NEW MEXICO  
Rig:PATRIOT 5  
PathFinder Office Supervisor: JUAN ALCOCER  
PathFinder Field Engineers:G.SAKAS  
M.SAKAS

Survey Horiz. Reference:WELLHEAD  
Ref Coordinates: LAT:32.34.40.5444 N LON:104.1.45.2335 W  
GRID Reference:NAD83 new mexico east Transverse Mercator  
Ref GRID Coord: X: 635009.5320 Y: 574115.1210  
North Aligned To:GRID NORTH  
Total Magnetic Correction: 7.54° EAST TO GRID  
Vertical Section Plane: 272.79  
Survey Vert. Reference: 26.50' Kelly Bushing To Ground  
Altitude:3325.00' Ground To MSL

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Measured Depth	12900.00	(feet)
Inclination	91.45	(deg)
Azimuth	273.50	(deg)
True Vertical Depth	8286.18	(feet)
Vertical Section	4714.41	(feet)
Survey X cord	630301.05	(feet)
Survey Y cord	574351.63	(feet)
Survey Lat	32.57861516 N	(deg)
Survey Lon	104.04451514 W	(deg)
Rectangular Corr. N/S	236.51 N	(feet)
Rectangular Corr. E/W	4708.48 W	(feet)
Closure Distance	4714.42	(feet)
Direction of Closure	272.88	(deg)
Dogleg Severity	0.00	(deg/100ft)

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
ZIA AHZ FED COM #2H  
EDDY COUNTY, NEW MEXICO  
Rig: PATRIOT 5  
PathFinder Office Supervisor: JUAN ALCOCER  
PathFinder Field Engineers: G.SAKAS  
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Survey Horiz. Reference: WELLHEAD  
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North Aligned To: GRID NORTH  
Total Magnetic Correction: 7.54° EAST TO GRID  
Vertical Section Plane: 272.79  
Survey Vert. Reference: 26.50' Kelly Bushing To Ground  
Altitude: 3325.00' Ground To MSL

Survey Calculations by RX5 V6.04A using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL		Closure		DLS (dg/100ft)
						Rectangular (ft)	Offsets (ft)	Dist (ft)	Dir (deg)	
TIED INTO MS GYRO SURVEY AT 300' MD.										
300.00	0.81	267.70	299.99	0.00	0.36	1.61 N	0.28 W	1.63@	350.13	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
359.00	0.97	278.95	358.98	59.00	1.27	1.67 N	1.19 W	2.05@	324.54	0.40
447.00	1.41	305.80	446.96	88.00	2.92	2.42 N	2.80 W	3.70@	310.80	0.79
506.00	0.97	270.81	505.95	59.00	4.03	2.85 N	3.89 W	4.83@	306.23	1.41
593.00	0.70	275.37	592.94	87.00	5.29	2.91 N	5.16 W	5.92@	299.45	0.32
685.00	0.35	277.15	684.94	92.00	6.13	3.00 N	6.00 W	6.70@	296.58	0.38
748.00	0.18	294.95	747.94	63.00	6.42	3.07 N	6.28 W	6.99@	296.03	0.30
842.00	0.18	309.12	841.94	94.00	6.67	3.22 N	6.52 W	7.28@	296.27	0.05
937.00	0.18	336.97	936.94	95.00	6.86	3.45 N	6.70 W	7.54@	297.26	0.09
1032.00	0.35	354.75	1031.94	95.00	6.96	3.88 N	6.78 W	7.81@	299.76	0.20
1127.00	0.53	31.45	1126.93	95.00	6.79	4.54 N	6.58 W	8.00@	304.61	0.34
1222.00	0.53	67.09	1221.93	95.00	6.19	5.09 N	5.95 W	7.83@	310.55	0.34
1327.00	0.55	61.15	1326.93	105.00	5.32	5.52 N	5.06 W	7.49@	317.50	0.06
1420.00	0.68	71.97	1419.92	93.00	4.43	5.91 N	4.14 W	7.21@	324.95	0.19
1539.00	0.35	250.33	1538.92	119.00	4.10	6.00 N	3.81 W	7.11@	327.57	0.87
1696.00	0.70	265.34	1695.91	157.00	5.50	5.76 N	5.22 W	7.78@	317.83	0.24
1790.00	0.88	258.41	1789.90	94.00	6.76	5.57 N	6.50 W	8.56@	310.60	0.22
1884.00	0.97	242.57	1883.89	94.00	8.15	5.06 N	7.91 W	9.39@	302.60	0.29
1978.00	0.70	216.31	1977.88	94.00	9.16	4.23 N	8.96 W	9.91@	295.28	0.49
2072.00	0.79	218.89	2071.87	94.00	9.85	3.26 N	9.71 W	10.24@	288.58	0.10
2166.00	0.88	231.80	2165.86	94.00	10.78	2.31 N	10.68 W	10.93@	282.22	0.22
2260.00	1.23	228.22	2259.85	94.00	12.04	1.19 N	12.00 W	12.06@	275.68	0.38

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
 ZIA AHZ FED COM #2H  
 EDDY COUNTY, NEW MEXICO  
 RIG:PATRIOT 5

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL		Closure		DLS (dg/100ft)
						Rectangular (ft)	Offsets (ft)	Dist (ft)	Dir (deg)	
2354.00	0.62	286.72	2353.84	94.00	13.26	0.67 N	13.24 W	13.26@	272.89	1.12
2449.00	1.14	281.16	2448.82	95.00	14.69	1.00 N	14.66 W	14.69@	273.90	0.55
2544.00	0.35	58.36	2543.82	95.00	15.39	1.33 N	15.34 W	15.40@	274.97	1.49
2639.00	0.26	357.30	2638.82	95.00	15.17	1.70 N	15.10 W	15.20@	276.43	0.34
2733.00	0.09	268.84	2732.82	94.00	15.26	1.91 N	15.19 W	15.31@	277.18	0.29
2827.00	0.18	264.80	2826.82	94.00	15.48	1.90 N	15.41 W	15.52@	277.03	0.10
2923.00	0.35	253.47	2922.82	96.00	15.91	1.80 N	15.84 W	15.94@	276.49	0.19
3017.00	0.18	217.41	3016.81	94.00	16.26	1.60 N	16.20 W	16.28@	275.65	0.24
3111.00	0.09	182.39	3110.81	94.00	16.35	1.41 N	16.30 W	16.36@	274.95	0.13
3206.00	0.18	140.90	3205.81	95.00	16.25	1.22 N	16.21 W	16.25@	274.31	0.13
3300.00	0.09	109.11	3299.81	94.00	16.08	1.08 N	16.04 W	16.08@	273.86	0.12
3395.00	0.09	354.52	3394.81	95.00	16.02	1.13 N	15.98 W	16.02@	274.05	0.16
3540.00	0.62	34.22	3539.81	145.00	15.62	1.89 N	15.55 W	15.66@	276.95	0.38
3674.00	0.35	44.68	3673.81	134.00	14.97	2.78 N	14.85 W	15.11@	280.62	0.21
3863.00	0.62	24.01	3862.80	189.00	14.22	4.13 N	14.03 W	14.63@	286.40	0.17
4051.00	0.88	5.91	4050.78	188.00	13.77	6.49 N	13.47 W	14.95@	295.74	0.19
4240.00	0.70	346.14	4239.77	189.00	14.02	9.06 N	13.60 W	16.34@	303.68	0.17
4429.00	0.44	27.60	4428.76	189.00	14.05	10.82 N	13.54 W	17.33@	308.64	0.25
4617.00	0.97	88.11	4616.74	188.00	12.16	11.52 N	11.61 W	16.35@	314.76	0.45
4807.00	0.70	68.72	4806.72	190.00	9.50	11.99 N	8.92 W	14.95@	323.34	0.20
4996.00	0.79	50.72	4995.71	189.00	7.47	13.23 N	6.84 W	14.90@	332.67	0.13
5185.00	0.97	82.24	5184.69	189.00	4.93	14.27 N	4.24 W	14.89@	343.44	0.27
5375.00	0.70	75.15	5374.67	190.00	2.25	14.79 N	1.53 W	14.87@	354.10	0.15
5565.00	0.70	58.86	5564.65	190.00	0.18	15.69 N	0.59 E	15.70@	2.14	0.10
5754.00	0.18	141.35	5753.65	189.00	-0.98	16.05 N	1.76 E	16.15@	6.26	0.37
5941.00	0.18	313.44	5940.65	187.00	-0.95	16.02 N	1.73 E	16.12@	6.16	0.19
6131.00	0.53	317.27	6130.64	190.00	-0.09	16.88 N	0.92 E	16.90@	3.11	0.19

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
 ZIA AHZ FED COM #2H  
 EDDY COUNTY, NEW MEXICO  
 RIG:PATRIOT 5

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
6225.00	0.26	145.92	6224.64	94.00	0.09	17.02 N	0.74 E	17.03@	2.49	0.84
6320.00	1.06	159.77	6319.63	95.00	-0.39	16.01 N	1.17 E	16.06@	4.16	0.85
6414.00	1.32	165.57	6413.61	94.00	-1.05	14.15 N	1.74 E	14.26@	7.00	0.30
6509.00	1.41	170.14	6508.59	95.00	-1.63	11.94 N	2.21 E	12.14@	10.48	0.15
6604.00	1.32	171.19	6603.56	95.00	-2.10	9.71 N	2.58 E	10.04@	14.87	0.10
6698.00	1.49	181.83	6697.53	94.00	-2.34	7.41 N	2.70 E	7.89@	20.03	0.33
6792.00	1.76	186.49	6791.49	94.00	-2.27	4.76 N	2.50 E	5.38@	27.73	0.32
6886.00	0.97	144.82	6885.47	94.00	-2.66	2.67 N	2.80 E	3.87@	46.28	1.30
6980.00	1.41	145.35	6979.45	94.00	-3.86	1.07 N	3.91 E	4.06@	74.67	0.47
7074.00	1.14	110.55	7073.43	94.00	-5.45	0.21 S	5.45 E	5.45@	92.18	0.86
7168.00	0.97	130.59	7167.41	94.00	-6.97	1.05 S	6.93 E	7.01@	98.64	0.43
7263.00	0.26	35.67	7262.41	95.00	-7.72	1.40 S	7.66 E	7.79@	100.36	1.08
7357.00	0.35	95.78	7356.41	94.00	-8.12	1.26 S	8.07 E	8.17@	98.85	0.34
7452.00	0.53	90.86	7451.40	95.00	-8.85	1.29 S	8.80 E	8.89@	98.35	0.19
7546.00	0.35	36.98	7545.40	94.00	-9.45	1.07 S	9.41 E	9.47@	96.49	0.46
7640.00	1.06	94.99	7639.39	94.00	-10.48	0.92 S	10.45 E	10.49@	95.01	0.98
7734.00	1.93	169.08	7733.37	94.00	-11.72	2.55 S	11.61 E	11.89@	102.37	2.05
7828.00	2.20	168.56	7827.31	94.00	-12.54	5.87 S	12.27 E	13.60@	115.56	0.29
7850.00	1.85	165.83	7849.29	22.00	-12.75	6.63 S	12.44 E	14.10@	118.04	1.65
7882.00	1.67	178.66	7881.28	32.00	-12.93	7.59 S	12.58 E	14.69@	121.12	1.35
7913.00	3.69	248.80	7912.25	31.00	-12.05	8.41 S	11.66 E	14.37@	125.79	11.27
7945.00	7.74	263.13	7944.08	32.00	-8.99	9.04 S	8.56 E	12.45@	136.56	13.32
7976.00	11.87	266.47	7974.62	31.00	-3.76	9.48 S	3.30 E	10.04@	160.81	13.44
8008.00	15.21	267.08	8005.73	32.00	3.69	9.90 S	4.18 W	10.75@	202.88	10.45
8039.00	18.11	266.99	8035.43	31.00	12.53	10.36 S	13.05 W	16.66@	231.56	9.36
8071.00	21.02	267.08	8065.58	32.00	23.19	10.91 S	23.75 W	26.14@	245.32	9.09
8102.00	24.27	268.66	8094.18	31.00	35.08	11.35 S	35.68 W	37.44@	252.36	10.67

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
 ZIA AHZ FED COM #2H  
 EDDY COUNTY, NEW MEXICO  
 RIG:PATRIOT 5

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL		Closure		DLS (dg/100ft)
						Rectangular (ft)	Offsets (ft)	Dist (ft)	Dir (deg)	
8133.00	27.35	270.07	8122.09	31.00	48.56	11.49 S	49.17 W	50.50@	256.85	10.13
8165.00	30.07	271.83	8150.15	32.00	63.92	11.22 S	64.54 W	65.51@	260.14	8.90
8196.00	33.77	271.92	8176.46	31.00	80.30	10.68 S	80.92 W	81.62@	262.48	11.94
8227.00	37.46	271.74	8201.66	31.00	98.35	10.11 S	98.96 W	99.47@	264.17	11.91
8259.00	41.50	271.30	8226.35	32.00	118.69	9.57 S	119.29 W	119.68@	265.41	12.65
8290.00	45.64	270.77	8248.81	31.00	140.04	9.19 S	140.65 W	140.95@	266.26	13.41
8322.00	49.68	269.98	8270.35	32.00	163.66	9.04 S	164.30 W	164.55@	266.85	12.76
8353.00	53.55	269.81	8289.60	31.00	187.93	9.09 S	188.59 W	188.81@	267.24	12.49
8384.00	57.68	269.72	8307.10	31.00	213.47	9.19 S	214.17 W	214.37@	267.54	13.32
8416.00	61.82	269.72	8323.22	32.00	241.07	9.33 S	241.81 W	241.99@	267.79	12.94
8447.00	65.60	269.72	8336.95	31.00	268.82	9.46 S	269.60 W	269.76@	267.99	12.19
8479.00	70.52	270.42	8348.90	32.00	298.46	9.42 S	299.27 W	299.42@	268.20	15.51
8510.00	74.66	271.30	8358.17	31.00	328.01	8.98 S	328.84 W	328.96@	268.44	13.63
8542.00	78.96	272.53	8365.47	32.00	359.16	7.93 S	359.97 W	360.06@	268.74	13.95
8574.00	83.19	273.58	8370.44	32.00	390.76	6.25 S	391.53 W	391.58@	269.09	13.61
8637.00	89.08	275.52	8374.68	63.00	453.56	1.26 S	454.16 W	454.16@	269.84	9.84
8731.00	91.45	275.43	8374.25	94.00	547.45	7.71 N	547.72 W	547.77@	270.81	2.52
8825.00	92.15	275.52	8371.30	94.00	641.30	16.67 N	641.24 W	641.46@	271.49	0.75
8919.00	91.71	275.69	8368.13	94.00	735.13	25.85 N	734.74 W	735.20@	272.01	0.50
9014.00	91.71	274.20	8365.30	95.00	830.02	34.03 N	829.34 W	830.04@	272.35	1.57
9107.00	91.45	274.02	8362.73	93.00	922.96	40.70 N	922.07 W	922.97@	272.53	0.34
9202.00	91.19	274.11	8360.54	95.00	1017.91	47.43 N	1016.80 W	1017.91@	272.67	0.29
9297.00	91.63	275.17	8358.21	95.00	1112.83	55.11 N	1111.46 W	1112.83@	272.84	1.21
9391.00	91.54	274.46	8355.61	94.00	1206.73	63.00 N	1205.09 W	1206.74@	272.99	0.76
9486.00	90.13	272.44	8354.22	95.00	1301.71	68.71 N	1299.90 W	1301.72@	273.03	2.59
9580.00	90.13	271.83	8354.01	94.00	1395.70	72.22 N	1393.84 W	1395.71@	272.97	0.65
9674.00	91.45	272.44	8352.71	94.00	1489.68	75.72 N	1487.76 W	1489.69@	272.91	1.55

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## Survey Report

YATES PETROLEUM CORP.  
 ZIA AHZ FED COM #2H  
 EDDY COUNTY, NEW MEXICO  
 RIG: PATRIOT 5

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
9767.00	91.45	272.35	8350.36	93.00	1582.65	79.60 N	1580.65 W	1582.65@	272.88	0.10
9862.00	91.98	272.18	8347.51	95.00	1677.61	83.35 N	1675.53 W	1677.61@	272.85	0.59
9956.00	92.07	272.35	8344.19	94.00	1771.54	87.07 N	1769.40 W	1771.54@	272.82	0.20
10051.00	90.84	272.44	8341.78	95.00	1866.51	91.04 N	1864.29 W	1866.51@	272.80	1.30
10145.00	90.75	272.35	8340.48	94.00	1960.50	94.96 N	1958.20 W	1960.50@	272.78	0.14
10240.00	91.98	273.06	8338.21	95.00	2055.47	99.45 N	2053.06 W	2055.47@	272.77	1.49
10333.00	92.33	273.23	8334.72	93.00	2148.40	104.54 N	2145.85 W	2148.40@	272.79	0.42
10428.00	91.80	272.62	8331.29	95.00	2243.34	109.39 N	2240.67 W	2243.34@	272.79	0.85
10523.00	92.15	272.79	8328.02	95.00	2338.28	113.87 N	2335.51 W	2338.28@	272.79	0.41
10617.00	91.45	273.58	8325.07	94.00	2432.23	119.09 N	2429.31 W	2432.23@	272.81	1.12
10712.00	89.52	273.23	8324.26	95.00	2527.22	124.73 N	2524.14 W	2527.22@	272.83	2.06
10806.00	89.52	273.15	8325.05	94.00	2621.21	129.96 N	2617.99 W	2621.21@	272.84	0.09
10900.00	89.87	273.32	8325.55	94.00	2715.21	135.27 N	2711.84 W	2715.21@	272.86	0.41
10994.00	90.13	273.67	8325.55	94.00	2809.20	141.00 N	2805.66 W	2809.20@	272.88	0.46
11089.00	90.13	273.50	8325.33	95.00	2904.19	146.94 N	2900.48 W	2904.20@	272.90	0.18
11184.00	89.60	273.50	8325.56	95.00	2999.18	152.74 N	2995.30 W	2999.19@	272.92	0.56
11279.00	89.69	272.97	8326.15	95.00	3094.18	158.10 N	3090.14 W	3094.19@	272.93	0.57
11373.00	90.57	272.18	8325.93	94.00	3188.17	162.32 N	3184.05 W	3188.18@	272.92	1.26
11469.00	91.28	271.56	8324.38	96.00	3284.15	165.45 N	3279.98 W	3284.15@	272.89	0.98
11563.00	91.36	271.39	8322.22	94.00	3378.10	167.87 N	3373.93 W	3378.10@	272.85	0.20
11657.00	91.45	272.09	8319.91	94.00	3472.05	170.73 N	3467.85 W	3472.05@	272.82	0.75
11752.00	91.36	271.48	8317.58	95.00	3567.01	173.68 N	3562.78 W	3567.01@	272.79	0.65
11846.00	91.98	271.48	8314.85	94.00	3660.95	176.11 N	3656.71 W	3660.95@	272.76	0.66
11940.00	92.24	271.74	8311.38	94.00	3754.86	178.75 N	3750.61 W	3754.86@	272.73	0.39
12035.00	91.98	272.97	8307.89	95.00	3849.79	182.65 N	3845.46 W	3849.80@	272.72	1.32
12130.00	91.80	273.76	8304.75	95.00	3944.74	188.22 N	3940.24 W	3944.74@	272.73	0.85
12224.00	91.63	273.94	8301.94	94.00	4038.68	194.53 N	4033.99 W	4038.68@	272.76	0.26



# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
 ZIA AHZ FED COM #2H  
 EDDY COUNTY, NEW MEXICO  
 RIG:PATRIOT 5

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL		Closure		DLS (dg/100ft)
						Rectangular (ft)	Offsets (ft)	Dist (ft)	Dir (deg)	
12319.00	90.92	273.15	8299.83	95.00	4133.64	200.40 N	4128.78 W	4133.64@	272.78	1.12
12414.00	90.92	273.58	8298.30	95.00	4228.63	205.98 N	4223.61 W	4228.63@	272.79	0.45
12509.00	91.28	274.20	8296.48	95.00	4323.59	212.42 N	4318.37 W	4323.59@	272.82	0.75
12603.00	91.54	273.94	8294.16	94.00	4417.54	219.09 N	4412.10 W	4417.54@	272.84	0.39
12698.00	91.63	272.97	8291.54	95.00	4512.50	224.82 N	4506.89 W	4512.50@	272.86	1.03
12793.00	91.54	273.32	8288.91	95.00	4607.46	230.03 N	4601.71 W	4607.46@	272.86	0.38
12825.00	91.45	273.50	8288.07	32.00	4639.44	231.93 N	4633.65 W	4639.45@	272.87	0.63
STRAIGHT LINE PROJECTION TO BIT AT 12900' MD.										
12900.00	91.45	273.50	8286.18	75.00	4714.41	236.51 N	4708.48 W	4714.42@	272.88	0.00



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## TIE-IN SURVEY INFORMATION SHEET

### CLIENT INFORMATION

CLIENT:	YATES PETROLEUM		
LEASE / WELL No.:	ZIA AHZ FED COM	#2H	
WELL LOCATION:	EDDY COUNTY		
COUNTY / STATE / COUNTRY:	EDDY	NM	USA
RIG:	PARTRIOT 5		
API WELL No.:	30-0150-40404		
JOB No.:	12MLD0253		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER		

### WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
<i>On Wall Plat:</i>	7.57	<i>LWD Calculated:</i>	7.535
		<i>Agreed Upon:</i>	7.54
X =	635009.532000	Feet	Y = 574115.121000 Feet
SITE LATITUDE:	32.577929	SITE LONGITUDE:	104.029232
GRID SYSTEM:	TRUE <input type="checkbox"/>	UTM <input type="checkbox"/>	LAMBERT <input checked="" type="checkbox"/> ZONE:
PROPOSED DRIFT DIRECTION:	272.79		
KELLY BUSHING ELEVATION:	26.5		
ALTITUDE:	3351.5	Feet	WATER DEPTH: Feet

### TIE-IN SURVEY

MEASURED DEPTH:	300
DRIFT ANGLE:	0.81
DRIFT DIRECTION:	267.7
TRUE VERTICAL DEPTH:	299.99
VERTICAL SECTION:	0.36
RECTANGULAR COORDINATE ( N / S ) :	1.61
RECTANGULAR COORDINATE ( E / W ) :	-0.28
CLOSURE DISTANCE / DIRECTION:	1.63                      350
SURVEY CALCULATION METHOD:	AA <input type="checkbox"/> MC <input checked="" type="checkbox"/> RC <input type="checkbox"/> BT <input type="checkbox"/>
SOURCE OF TIE-IN DATA ( COMPANY ):	MS SURVEY
COPY OF TIE-IN SURVEY REPORT	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

### WELL PLAN

KICKOFF DEPTH:	TOTAL DEPTH:
KICKOFF ANGLE:	MAX ANGLE:

PES Engineers:                                 GEORGE SAKAS                                

\_\_\_\_\_

\*\*Signature of both field engineers required if applicable

Directional Driller:                                 IRBY LEJUNE                                

DATE: \_\_\_\_\_



<b>Company:</b>	YATES PETROLEUM CORPORATION	<b>Operator:</b>	JOSHUA SMITH
<b>Lease / Well:</b>	ZIA "AHZ" FEDERAL COM #2H	<b>Job Number:</b>	SVCO-120873
<b>County/Parish:</b>	EDDY COUNTY	<b>Probe Serial #</b>	123
<b>State:</b>	NEW MEXICO	<b>Proposed Direction:</b>	0
<b>Date:</b>	6/22/2012	<b>Mag. Declination:</b>	7.56 EAST TO GRID
<b>API#:</b>	NONE	<b>Rig / RKB:</b>	PATRIOT #5 / RKB 26 FEET
<b>Dir. Company:</b>	PATHFINDER	<b>Tie-In From:</b>	N / A
<b>FIELD USE ONLY, DEFINITIVE SURVEY WILL COME FROM MS Survey OFFICES</b>			

TIE-IN Survey					
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Coordinates (+N/-S)	Coordinates (+E/-W)
0	0.00	0.00	0.00	0.00	0.00

Rate Gyro Survey Report									
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Vertical Section	Coordinates (+N/-S)	Coordinates (+E/-W)	Dog-Leg / 100 ft.	Closure Distance	Closure Direction
100	0.50	22.78	100.00	0.40	0.40	0.17	0.50	0.44	22.78°
200	0.48	5.79	200.00	1.22	1.22	0.38	0.15	1.28	17.29°
300	0.81	267.70	299.99	1.61	1.61	-0.28	1.00	1.63	350.00°



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# PathFinder Energy Services, Inc. Magnetic & Grid Calculations

*field  
codes*

YATES PETROLEUM CORP.  
ZIA "AHZ" FEDERAL COM  
EDDY COUNTY, NEW MEXICO  
Rig: PATRIOT #5

Thu Jun 14 11:17:55 2012

## Coordinates

Latitude:	32.577929 N (32 deg. 34 min. 40.5444 sec.)
Longitude:	104.029232 W (-104 deg. 1 min. 45.2335 sec.)
Elevation:	3343.00 feet.
Calculation Date:	Jun/14/2012

## Magnetic Calculations

Model:	IGRF2010
Dip Angle:	60.4112 degrees
Total Magnetic Field:	0.48680 gauss
Magnetic Declination:	7.700958 degrees
Horizontal Intensity:	0.240367 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.700958 Degs

## Transverse Mercator Grid Calculations NAD83

Grid System:	Transverse Mercator: new mexico east
Ellipsoid:	GRS80
X:	635009.5320 feet
Y:	574115.1210 feet
True to Grid: (convergence)	-0.163744 degrees
Magnetic to Grid:	7.537214 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.537214 Degs.

# PathFinder Energy Services, Inc.

## Magnetic & Grid Calculations

Field  
calcs

Wed Jun 20 10:02:20 2012

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### Coordinates

Latitude: 32.577929 N ( 32 deg. 34 min. 40.5444 sec.)  
Longitude: 104.029232 W (-104 deg. 1 min. 45.2335 sec.)  
Elevation: 3351.50 feet.  
Calculation Date: Jun/20/2012

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### Magnetic Calculations

Model: IGRF2010  
Dip Angle: 60.4108 degrees  
Total Magnetic Field: 0.48678 gauss  
Magnetic Declination: 7.698939 degrees  
Horizontal Intensity: 0.240362 gauss  
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.698939 Degs

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### Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east  
Ellipsoid: GRS80  
X: 635009.5320 feet  
Y: 574115.1210 feet  
True to Grid: (convergence) -0.163744 degrees  
Magnetic to Grid: 7.535196 degrees  
To Convert a Magnetic Dir. to a GRID dir. Add 7.535196 Degs.